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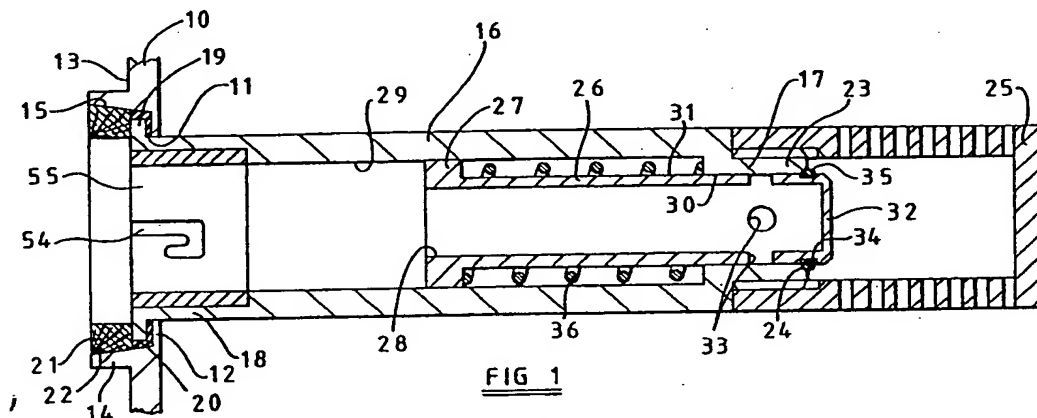
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Frist:

(54) Dispensing valve

(57) A dispensing valve for a beer cask (10) comprises an elongate hollow valve body (16) having inlet and outlet apertures (17 and 18) therein. A valve member (26) is located within the body (16) and is movable longitudinally with respect to the valve body (16) between open and closed positions. The valve member (26) is resiliently biased by spring (36) towards a closed position and is adapted to be moved to an open position by insertion into the valve body (16) of a removable connector which serves to connect the outlet of the valve to a flow line. The components are made of food-grade polyacetal resin or stainless steel.



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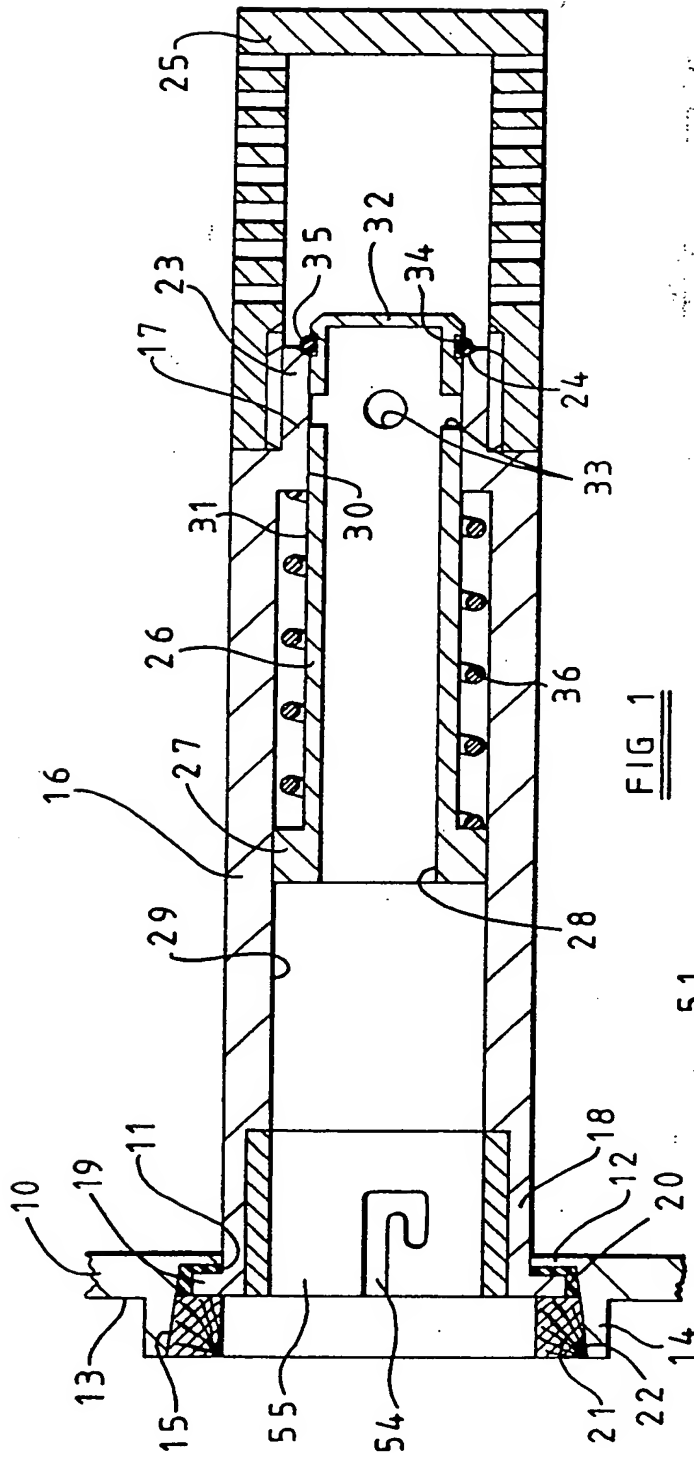


FIG 1

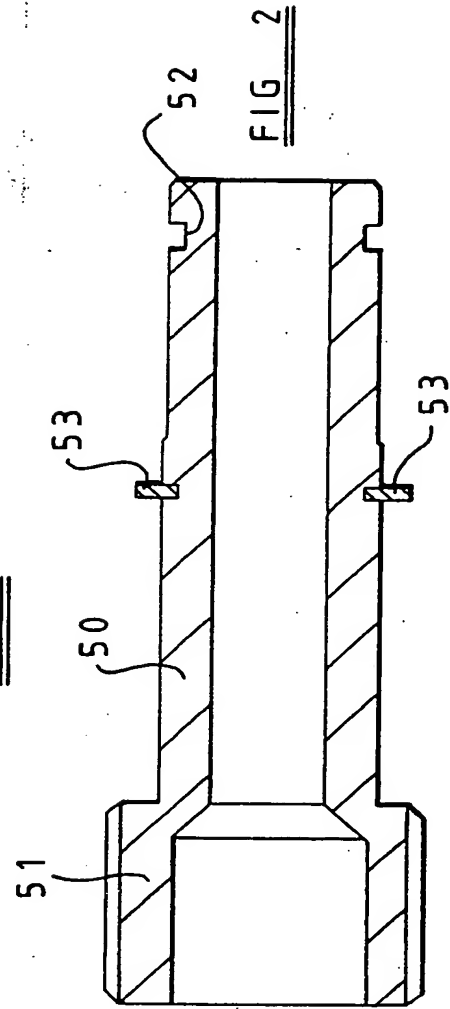


FIG 2

SPECIFICATION

Dispensing valve

5 The present invention relates to a dispensing valve, typically, although not exclusively, for use in containers for non-pressurised liquids such as beer casks etc.

Typically, casks such as beer casks have been
10 tapped by providing a tapered wooden bung in a hole in one end of the cask. The bung has a hole through the centre thereof which is plugged with a disposable plug. When it is desired to fit a tap to the cask, the tapered inlet to the tap is placed on the plug
15 and the plug is driven into the cask by hitting the tap with a mallet. The action of driving the plug into the cask also drives the inlet of the tap into the hole in the bung and it is held there by friction with the bung. However, this system suffers from the problem that it
20 is inconvenient to use and often results in spillage of liquid from the cask. It is also difficult to replace the tap while there is still liquid in the cask without spilling any.

Because of the nature of the type of tap described
25 above, it is necessary to remove the tap and bung before the cask can be cleaned before re-use.

It is an object of the present invention to provide a device which obviates or mitigates the above problems, which can allow easy connection to a beer
30 pump, and which can be left inserted into the cask during any cleansing operation.

In accordance with the present invention there is provided a dispensing valve adapted to be located within a container for liquids to control the flow of a
35 liquid therefrom comprising an elongate hollow valve body having inlet and outlet apertures therein and a valve member located within the body, said valve member being movable longitudinally with respect to the valve body between open and closed
40 positions and being resiliently biased towards a closed position, the valve member being adapted to be moved to an open position by insertion into the valve body of a removable connector which serves to connect the outlet of the valve to a flow line.

45 Preferably, the valve member serves to close the inlet aperture in the valve body and leaves the outlet aperture open.

It is also preferred that the valve member is mounted slidably within the valve body, is hollow, and has
50 inlet and outlet apertures therein such that flow through the inlet aperture and the valve body takes place via said valve member.

Conveniently, a portion of the valve member projects through the inlet aperture of the valve body
55 when in an open position, and at least one inlet aperture is provided in a portion of the valve member which is located externally of the valve body when in the open position.

The present invention will now be described, by way of example, with reference to the accompanying drawings in which:-

Figure 1 is a sectional side view of a dispensing valve according to an embodiment of the present invention, and

65 *Figure 2* is a section side view of a connector for

use with the valve shown in *Figure 1*.

Referring now to the drawings, the dispensing valve shown therein is intended for use in place of a normal tap in a standard aluminium beer cask. A conventional beer cask is generally cylindrical and has a hole in its side mid-way between the ends (not shown) and a tap hole positioned adjacent the periphery of one of its ends 10 (shown in part). In use, the cask is normally laid on its side with the hole upmost
75 and the tap hole at the lowest point of the end 10. The tap hole comprises an aperture 11 around which is a radially inwardly projecting flange 12. The walls of the aperture 11 are extended outwardly of the outer face 13 of the end 10 to form a collar 14, and the inner
80 wall 15 of the collar 14 is frusto-conically tapered towards the aperture 11.

The valve comprises a valve body 16 made of food grade polyacetal resin, although other suitable materials such as stainless steel can be used. The body
85 16 is in the form of a hollow elongate cylinder and has an inlet end portion 17 of reduced diameter and an outlet end portion 18. The body 16 is dimensioned so that it can pass through the aperture 11 into the inside of the cask. An external flange 19 is provided around the outlet end to prevent complete insertion
90 of the valve into the cask and to serve as a means for locating the valve in the aperture 11. The flange 19 overlies the flange 12 and a rubber washer 20 is provided between the flanges 12 and 19 to ensure a leak-free fit. An annular wooden retainer 21 having a frusto-conically tapered outer surface 22 is driven into the collar 14 to urge the flanges 12 and 19 into engagement and is a friction fit with the collar 14.
100 Alternatively, the standard cask can be modified by boring the walls 15 of the collar 14 parallel, providing a thread thereon and having a correspondingly threaded retainer member of metal or plastic with parallel sides to hold the valve in place.

The inlet end portion 17 is defined by a reduced diameter portion of the peripheral wall of the body 16
105 and has a free end 23 which is frusto-conically tapered to define a valve seat 24. A removable filter 25 having the same outside diameter as the main portion of body 16 is screw-engaged over the inlet end portion 17 and serves to prevent passage of large particles.

A tubular valve member 26 is disposed in the body 16 and is a close sliding fit with the inner wall of the inner end portion 17.

115 The member 26 is located co-axially with the body 16 by means of a (a) an annular flange 27 which is provided around an outlet end 28 of the member 26 and which slidably engages an inner wall 29 of the body 16 and (b) the engagement of side wall 31 of the member 26 within the inlet end portion 17. The end 32 of the member 26 remote from the outlet end 28 is closed and a series of inlet apertures 33 are provided in the side wall 31 of the member 26 near the end 32. A groove 34 is provided the side wall 31 between the inlet apertures 33 and the end 32 and a rubber O-ring
125 35 is located in this groove. The end 32 and the groove 34 with the O-ring 35 project beyond the inlet portion 17 and, when the valve is in the close position, the O-ring 35 is urged against the valve seat 24
130 to effectively seal the inlet of the body 16. The

member 26 is normally urged into this closed position by means of a compression spring 36 which is located in the annular space formed between the member 26 and the body 16 and acts upon the flange 27 and the inner end of the inlet portion 17.

A connector for engagement with the body 16 is shown in Figure 2 and comprises a hollow tubular member 50 which is open at both ends. One end of the member is defined by an externally screw-threaded sleeve 51 for engagement by a standard pipe fitting for connection to a beer pump. An annular groove 52 is provided in the outer wall of the member 50 adjacent the outer end thereof and receives an O-ring (not shown) which can sealingly engage the inner wall 29 of the body 16. A pair of outwardly extending projections 53 are located on diametrically opposite sides of the member 50 intermediate its ends and are engaged in bayonet fashion in grooves 54 provided in a metal bush 55 in the outlet end portion 18 of the body 16. The connector is dimensioned such that it can be inserted into the body 16. The projections 53 are located such that the said other end 55 bears upon the outlet end 28 of the member 26 and moves the latter into an open position against the action of the spring 36 before the bayonet-type connection can be made. The O-ring in the groove 52 seals with the inner wall 29 of the body 16 before the valve member is opened, thus minimising risk of leakage during connection. The spring 36 serves to retain the positions 53 in the grooves 54.

During opening of the valve, the member 26 is moved through the inlet portion 17 until it projects into the space within the filter 25 with the apertures 33 positioned beyond the inlet portion 17. In this position liquid can flow through the apertures 33 into the member 26, through the body 16 and through the connector. When the connector is removed, the valve member 26 is returned to the closed position by the action of a spring 32. As the apertures 33 pass the valve seat 24, the edge of the valve seat 24 and the edges of the apertures 33 create a shearing action which cuts off any solid or semi-solid material which may be blocking the apertures 33 and which may prevent the valve from closing properly.

Conveniently the bush 55 is formed of a wear resistant material such as stainless steel around which the body 16 is moulded.

The connector, valve member and filter may all be made of a suitable material such as a food-grade plastics for stainless steel.

The valve described above may be left in a barrel while it is being washed out prior to re-use.

In an alternative embodiment (not shown), the bayonet grooves 54, instead of being provided in bush 55, are provided in the retainer member which is used to retain the valve body 16 in the cask. In such an event, the bush 55 can be dispensed with and the projection 53 on the connector appropriately relocated so as to be engageable with the grooves in the retainer member.

CLAIMS

1. A dispensing valve adapted to be located within a container for liquids to control the flow of a

liquid therefrom comprising an elongate hollow valve body having inlet and outlet apertures therein and a valve member located within the body, said valve member being movable longitudinally with respect to the valve body between open and closed positions and being resiliently biased towards a closed position, the valve member being adapted to be moved to an open position by insertion into the valve body of a removable connector which serves to connect the outlet of the valve to a flow line.

2. A valve as claimed in claim 1, wherein the valve member serves to close the inlet aperture in the valve body and leaves the outlet aperture open.

3. A valve as claimed in claim 1, wherein the valve member is mounted slidably within the valve body, is hollow, and has inlet and outlet apertures therein such that flow through the inlet aperture and the valve body takes place via said valve member.

4. A valve as claimed in any preceding claim, wherein a portion of the valve member projects through the inlet aperture of the valve body when in an open position, and at least one inlet aperture is provided in a portion of the valve member which is located externally of the valve body when in the open position.

5. A disposing valve substantially as hereinbefore described with reference to the accompanying drawings.

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